

Reply to DRMS Team Response to DRMS IRP Comments

DRMS Independent Review Panel

December 8, 2007

The IRP appreciates the DRMS authors' efforts in their response to the IRP's substantial comments on the DRMS Phase 1 Report. It is clear from the detailed responses that they have thought carefully about the content, style and organization of the Phase I Report. We are pleased that the DRMS team will be conducting additional analyses and modifying the report presentation in response to our comments. As we read these responses, we are particularly pleased that additional work will be performed to:

- (1) better understand, explain and justify or refine the results of the seismic modeling by conducting and presenting sensitivity analyses, reviewing the seismic fragility models, and presenting a back-analysis for the 1906 earthquake;
- (2) consider higher-frequency, lower-magnitude events in the flooding risk analysis;
- (3) explicitly assess the risk to human life;
- (4) improve the modeling of ecological risks;
- (5) make more direct reference to the TMs and update the TMs for accuracy and appropriate content;
- (6) add citations and references in the text and TMs to clarify assumptions, approaches, and hypotheses.

In addition to these points, the IRP would also emphasize the following issues, which we believe are extremely important for a final product.

First, in preparing a "summary" report for public consumption, we believe that it is not only possible but essential for this summary to be simultaneously accessible to a lay person yet entirely accurate from a scientific perspective. We want to emphasize that compromises on the science are not necessary to achieve this goal. As an example of how this has been accomplished before, we refer the DRMS authors to the synthesis report of the 2006 California Governor's Study by the California Energy Commission, PIER Program, "Our Changing Climate, Assessing the Risks to California"¹. This is an excellent example of the type of document that needs to be written to synthesize and communicate a large amount of technical information, such as is contained in the DRMS analyses, to a public audience while at the same time maintaining a rigorous, scientific framework.

¹ CEC-500-2006-077: http://www.climatechange.ca.gov/biennial_reports/2006report/index.html

As this summary report will not only act as the “front end” to the full DRMS report, but may in fact be the only thing read by many of the people using this information for policy decisions, it is a critical document. As such, its appeal to a lay audience must not be achieved at the expense of its scientific integrity.

Secondly, the IRP has some continuing concerns about the use of climate projections in the DRMS effort. To accurately represent the uncertainty in future climate projections, it is essential to include simulations from both higher and lower emission scenarios, multiple climate models, and a variety of plausible sea level projections. The range in possible outcomes due to uncertainty in future climate projections must be presented, since the impacts can radically differ from one scenario to another (and even from one model to another). Relying on only one set of mid-range climate projections produces a false sense of inevitability. This could have serious consequences for policy decisions that are based on the assumption that a certain amount or type of change is all that can be expected over the coming century. This is especially important when projecting changes in sea level and stream flow, both of which are major drivers in levee fragility. In previous discussions with the DRMS authors, the IRP members have pointed out specific publications and additional data sources that can be used to address these issues, including the climate TM itself (which accurately summarizes the potential range of sea level rise over the coming century). We strongly urge the authors to utilize these resources to their full potential.

Thirdly, the IRP would like to know how the Phase 2 analysis plans to address our comments on Phase 1. We are concerned that Phase 2 seems to be moving ahead without any stated caveats about possible mid-course corrections based on changes to Phase 1 analyses. We are particularly concerned because some of the responses to our comments stated that analyses will be re-done and some analyses will be expanded. It is critical that the outcomes of new analyses be incorporated into a Phase 2 report, and that any changes in interpretations are accurately conveyed to policy makers. It is also critical that any changes in methodology and approaches are recorded in new/revised TMs. These represent repositories of the methods used and will be essential for continued analyses and assessment of the DRMS effort as policy continues to develop in the future. As such, it is essential to implement a completely transparent system that allows access to all data, methods and models used in this work.

Finally, the IRP wants to thank the DRMS authors for their detailed responses to our comments on the Phase 1 report. We look forward to reviewing the revised report and expect a greatly improved and well-documented report that will be more accessible to the scientific, technical and policy community.